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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/808,469	03/25/2004	Tomohisa Hamano	Q80134	6291
23373	7590	11/02/2004	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			AMARI, ALESSANDRO V	
			ART UNIT	PAPER NUMBER
			2872	

DATE MAILED: 11/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/808,469

Applicant(s)

HAMANO ET AL.

Examiner

Alessandro V. Amari

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 24-51 is/are pending in the application.
- 4a) Of the above claim(s) 29-39 and 46-51 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 24-28 and 40-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 09/866,605.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/25/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Claims 29-39 and 46-51 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 23 September 2004.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 24, 25, 26, 28, 40 and 43 are rejected under 35 U.S.C. 102(e) as being anticipated by Chao et al US 6,285,503.

In regard to claims 24 and 25, Chao et al disclose a process for fabricating a computer-generated hologram as described in column 2, lines 56-63 and column 4, lines 65-68 by defining a range which diffraction light obtained by diffraction of incident light leaves, determining a hologram phase distribution for allowing said diffraction light to leave the defined range as described in column 2, lines 27-55, quantizing a determined phase distribution to find a quantized depth of a hologram relief and the number of steps of said depth as described in column 3, lines 61-65, repeating

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photoetching given times corresponding to an obtained depth and the number of steps to form a relief pattern on an etching substrate, and patterning a resin layer using said relief pattern to form a hologram relief on a surface of said resin layer as described in column 4, lines 1-34.

Regarding claims 26 and 40, Chao et al disclose that said phase distribution is determined pet minute elemental hologram piece forming the hologram piece forming the hologram, and said relief is formed on the basis of a phase distribution obtained by repeatedly arranging a phase distribution of said elemental hologram piece across said substrate as described in column 2, lines 23-55 and column 4, lines 1-35.

Regarding claims 28 and 43, Chao et al disclose that the number of steps L having the depth of said relief is the Nth power of 2 where N is the number of photoetching cycles as described in column 4, lines 1-35.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 27, 41, 42, 44 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chao et al US 6,285,503 in view of Veldkamp et al US 4,846,552.

Regarding claims 27, 41, 42, 44 and 45, Chao et al teaches the invention as set forth above and regarding claims 44 and 45, teaches that the number of steps L having the depth of said relief is the Nth power of 2 where N is the number of photoetching

cycles as described in column 4, lines 1-35 above but regarding claims 27, 41 and 42, does not teach an optical reflective layer laminated on and along a relief side or other side of said resin layer.

Regarding claims 27, 41 and 42, Veldkamp et al teaches (see Figure 1) an optical reflective layer (102) laminated on and along a relief side or other side of said resin layer.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the optical reflective layer as taught by Veldkamp et al in the hologram of Chao et al in order to achieve a higher quality and a higher diffractive efficiency hologram.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sekine US 6,417,940 teaches a process for fabricating a computer-generated hologram as shown in Figures 1-4. Unno US 6,120,950 teaches a process for fabricating a hologram as shown in Figures 1, 2 and 4.


7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alessandro V. Amari whose telephone number is (571) 272-2306. The examiner can normally be reached on Monday-Friday 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ava *Q14*
20 October 2004


MARK A. ROBINSON
PRIMARY EXAMINER